

Release Notes – Build 393

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Overview

The focus is on MRP

Build 393 is focused on MRP. The primary purpose of our software is to help companies deliver on time using less inventory and WIP, which can only be achieved with MRP.

The four common sense item settings

MRP is driven by four common sense item settings – the *Reorder Level, Min Order, Lead Days*, and *Job Days* – which generate a coordinated master schedule. In build 393 we introduce two new tools that help you establish these item settings – the *Reorder Calculator* and the *Lead Days Generator*.

The Reorder Calculator

The *Reorder Calculator* is used to establish the *Reorder Level* and *Min Order* settings by means of a monthly forecast. The monthly forecast consists of three elements – estimated *Monthly Sales*, estimated *Monthly Usage*, and a *Safety Stock* factor. Past monthly amounts and quarterly averages are provided to help you make these estimates. The monthly forecast is then translated into a daily average, which is multiplied by the item's *Planning Period* days to generate a calculated *Reorder Level*.

A new *Supply Days* setting within the *Reorder Calculator* enables you to establish how many days supply is to be covered by each job or PO. The program takes the monthly forecast, translates it into a daily average, which is

then multiplied by the *Supply Days* to generate a calculated *Min Order* amount. This provides an ideal means for generating staggered POs for extremely long lead time items and for generating POs at regular intervals for blanket purchases.

The Lead Days Generator

The *Lead Days Generator* automatically calculates the *Lead Days* allocation for M items and is made equal to the longest lead time among the item's to-order components. This takes all the guesswork out of the *Lead Days* allocation and provides for proper alignment of scheduling dates during multi-level job generation.

A new *Lead Days Inquiry* displays the to-order components in an item's product structure that contribute to the calculated *Lead Days* allocation. This helps you assess which components might be better being made or purchased to stock to shorten overall delivery time of the parent item.

In addition to the *Reorder Calculator* and *Lead Days Generator*, the *Production* and *Delivery* inquiries have been improved to help you establish the *Job Days* and P item *Lead Days* allocations.

Addressing common planning issues

These MRP item setting tools, which are all accessed within the *MRP Settings* screen, address the common planning issues that every company deals with, including:

- Should an item be made or purchased to order or to stock?
- If made or purchased to stock, what is the appropriate reorder level?
- How can a job or PO reflect an economical order quantity?
- How are POs planned for extremely long lead time items?
- How can POs be issued at regular intervals for blanket purchases?
- How much time should be allocated to make an item?
- How much time should be allocated to purchase an item?
- How long does it take to deliver a make to order item?
- How can the delivery time for a make to order item be shortened?
- How can the shop reliably complete jobs on time?

Success with MRP – which means delivering on time using less inventory and WIP – is all about getting the four common sense item settings right. If you have been unclear as to how to properly establish these item settings, the *Reorder Calculator* and *Lead Days Generator* will be a big help.

Establishing required dates for make to order items

Besides the new item setting tools, the other significant MRP enhancement is the way required dates are established for make to order and buy to order items in sales orders.

Make to order items are now forward scheduled by the item's *Lead Days* + *Job Days* setting. Buy to order items are forward scheduled by the item's *Lead Days* setting. In both cases, an *Extra Shop Days* amount can be specified in *Sales Order Defaults* that can be used to pad required dates to provide extra slack in the schedule or to be used on a temporary basis when shop capacity is constrained.

Not only does this help you quote realistic shipping dates to customers, it synchronizes sales order required dates with MRP so that these dates are achievable by production and orders get delivered on time.

New documentation and training videos

To help you get the most out of MRP, a *How to Use MRP* preface has been added to the MRP chapter in the Operating Guide, which covers every facet of MRP, including an overview, manufactured item setup, purchased item setup, sales order required dates, MRP generation, and managing the master schedule.

In addition, all the MRP-related training videos within the Mfg #2 - Job Planning, Mfg #3 - Job Creation, Purch #2 - PO Planning, and Purch #3 - PO Creation training courses have been updated.

System Administrator Task List

Pre-Installation Recommendations

Obtain support subscription

We do not advise installing an update without a support subscription. Besides being able to submit support tickets, a support subscription gives you access to the "Training Company" option described below. A support subscription also enables your users to review the video training courses listed below.

Preview training company

With each new product build we recommend that you install our "training company" option before you apply the product update. This is especially beneficial with build 393 because it has so many new features.

The training company option enables you to install a special "preview" version of build 393 on your server which uses a copy of your database. The training company enables users to explore the new release in advance, with the ability to make actual entries on your own data, before you apply the update to your live system.

The training company installation file can be downloaded from the "What's New" area of the online support center.

Review new training videos

We recommend that your users review the new and updated training courses listed at the end of this document.

Review resolved programming issues

A list of resolved programming issues in build 393 is available in the "What's New" area of the online support center.

Post-Installation Tasks

Print MRP chapter

If you maintain a hard copy of the *Operating Guide* for user reference, reprint chapter 7, *MRP*, in its entirety, which has been completely revised.

Review the MRP Interval setting

Go to *MRP Defaults* and make sure the *MRP Interval* setting does not exceed 5-7 shop days. If you run MRP daily, you can set this at 2-3 days. Any setting larger than 5-7 shop days distorts item planning periods, mis-aligns supply and demand, inflates job and PO quantities, and results in shortages and overstocking.

NOTE: Larger settings are currently allowed, but the interval amount will be capped at a maximum of '7' shop days in the next product build.

Review P item Lead Days allocations

For proper PO generation and M item *Lead Days* calculations, make sure that <u>each and every</u> purchased item is given an appropriate *Lead Days* allocation.

Review Job Days allocations

For proper job generation and M item *Lead Days* calculations, make sure that <u>each and every</u> manufactured item is given an appropriate *Job Days* allocation.

Activate the Lead Days Generator

Go to *MRP Defaults* and select the *Use Lead Days Generator* option. This automatically updates the *Lead Days* allocation for all M items in real time and provides for correct scheduling alignment of make to order subassembly jobs.

NOTE1: Activation will significantly change existing *Lead Days* amounts. If you wish to assess the magnitude of these changes, you can activate the *Lead Days Generator* in the training company first and compare *Lead Days* amounts between the training company and your live company.

NOTE2: This setting is optional for transitional purposes, but in the next product build, it will become a standard feature.

Review M item Lead Days amounts

Your M item *Lead Days* allocations are likely to be completely different due to activation of the *Lead Days Generator*. You can review the item's *Lead Days Inquiry* to view the to-order components that contribute to the *Lead Days* calculation. In cases where you consider the *Lead Days* to be excessive, you can change contributor components from being to-order to to-stock to shorten the calculated amount.

Review item Reorder Levels

To avoid over-stocking or shortages, we suggest you review existing item *Reorder Level* amounts using the new *Reorder Calculator*, which properly calculates the *Reorder Level* baed on a monthly forecast that consists of estimated sales, usage, and a safety stock factor.

Review item Min Order amounts

The importance of the item *Min Order* setting has not been emphasized in the past. It provides control over job and PO quantities and can reduce the number of jobs and POs that get generated. It can be used to generate an economical order quantity, staggered POs for extremely long lead time items, and POs at regular intervals for blanket purchases.

Establish Sales Order Defaults

Go to the *Sales Order Defaults* and establish default settings for the header promise date and make to order and buy to order line item required dates.

New Features

Grid Output Options

Output to CSV

The grid *Output* function used throughout the system to export grid contents has a new 'Output to CSV' option that replaces the 'Output to Text' option. The CSV file format provides control over punctuation characters and other formatting issues that was lacking in the old text file format.

Data Import – Item Suppliers

(File – Data Import – Item Sources – Item Suppliers)

Supplier Price is now updateable

The *Supplier Price*, which was formerly a one-time import field, can now be updated as needed to import current supplier prices.

Data Export

(File – Data Export)

New export utility replaces old wizard

A new data export utility replaces the old export wizard. All the data import screens have been given export equivalents, which are listed for selection on the opening screen. Data can be exported in CSV or XLS file formats.

System Defaults

(Admin – System Defaults)

Screen Sizes

Screen size behaviour has been standardized throughout the system. Several new screens have been added to the *Default Screen Sizes* tab within the *System Defaults* screen to designate whether screens are to launch in 'Normal' or 'Maximized' format.

NOTE: This update changes the following screens to the 'Maximize' setting because of their inherent wide-screen nature: *MRP Settings, Shop Control Panel, Job Control Panel, Job Schedule, PO Schedule.* This can be changed back to the 'Normal' setting within the *System Defaults* screen, if so desired.

Item ID Change (New)

(Utilities – ID Changes – Item ID Change)

Use this screen to change a stock item ID number across all associated database tables.

Database Queries

(Utilities – Database Queries)

The old-style spreadsheet that was supplied with the database query has been replaced with an output grid and buttons that enable export to a CSV or XLS file.

Stock Items

(Inventory – Stock Items)

Password security check added to all links

All links from the *Stock Items* screen to outside screens are now subject to the standard password security check – including links to the *Bills of Material*, *Where Used*, *Base Prices*, *Cost Rollup*, *MRP Settings*, and *Purchase Prices* screens.

New Stock Item Screen (New)

When the *New* button is clicked to create a new stock item record, a *New Stock Item* screen is now launched, which presents all required fields as well as selected optional fields of importance. This provides for rapid and convenient item creation.

Detail Tab – Sub-Tab Row

For greater clarity of function, various supporting fields have been reorganized and grouped into the following sub-tabs located in the lower portion of the *Detail* tab:

MRP

Item MRP settings continue to be displayed on the *MRP* sub-tab, but are now read-only. To edit settings, click the *MRP* Settings button in the lower right corner, which links to this item's record within that screen.

Shipping

This sub-tab displays shipping related fields, including the *Unit Weight*, *Unit Volume*, *Std Pack*, *Bar Code*, and *Warranty Code*.

Misc

This sub-tab displays dimension and drawing fields, including the *Length*, *Width*, *Proportion*, *Drawing No*, and *Title*.

Alternates

This sub-tab has been moved from the Sources tab to the Detail tab.

Customers

This sub-tab has been moved from the Sources tab to the Detail tab.

Sources Tab

This tab is now only visible against P (purchased) items.

Supplier Price

The supplier price can now be entered directly against the supplier record within the *Sources* tab. This provides for more convenient pricing maintenance and enables price comparison among item suppliers.

Sales Order Defaults (New)

(Sales – Sales Setup – Sales Order Defaults)

Use this new screen to establish default sales order promise dates and line item required dates. The screen consists of three settings:

Promise Date

The sales order header *Promise Date* defaults to the current date unless you specify extra *Shop Days* in this field. "Shop days" refer to valid shop days defined on the *Shop Calendar*.

How it is used

The sales order header *Promise Date* is the shipping date quoted to customers. Each sales order line item that is made or purchased to stock (meaning that it has a *Reorder Level* greater than zero) is given a line *Required* date equal to the header *Promise Date*. Here are examples how the extra *Shop Days* setting can be used:

- If it is your policy to ship items from stock on the same day the order is received, specify '0' *Shop Days*.
- If it is your policy to ship items from stock on the next business day, specify '1' Shop Days.
- If you never ship from stock, enter an extra *Shop Days* amount that represents a typical delivery time, such as '10' days.

Make to Order Promise Date

Use this setting to determine the sales order line *Required* date for make to order items (those with a *Reorder Level* of zero).

Make to order dates must be synchronized

Sales order required dates for make to order items must be synchronized with the planned job dates that are generated by MRP in order to provide sales with realistic shipping dates that are achievable by production.

How the required date gets established

When a sales order line is created for a make to order item, the *Required* date is forward scheduled from the current date by the item's *Lead Days* + *Job Days* allocations, skipping over non-shop days defined on the shop calendar.

This is exactly the same formula used by MRP when it backward schedules planned jobs from required dates and insures that sales order and MRP dates are synchronized.

The required date for make to order items can also be extended by specifying an extra *Shop Days* amount.

Using the extra Shop Days setting

The extra Shop Days amount can be used for the following purposes:

To quote conservative delivery dates

Keep in mind that the default required date, without extra *Shop Days* added, represents the <u>minimum</u> required date for normal orders. If you wish to quote a more conservative required date as standard policy, knowing that it can be shortened to the minimum when needed, you can "pad" required dates with an extra *Shop Days* amount.

To avoid late jobs when MRP is run the next day

If you do not always run MRP on the same day that sales orders are entered, make to order jobs will be one day late relative to required dates when generated within MRP. To avoid this, specify one or two extra *Shop Days*.

To give jobs more preparation time

If your make to order jobs need additional time for advance preparation, such as to refine custom job details, you can specify extra *Shop Days* to provide additional time before job start dates are scheduled.

To delay jobs when shop capacity is temporarily constrained

You can use the extra *Shop Days* setting at times when shop capacity is temporarily constrained and jobs are to be delayed because they must wait longer than normal before they can be released to the shop.

Delaying jobs when shop capacity is constrained also delays associated jobs and purchase orders for subassemblies, components, and raw materials and therefore keeps the master schedule as lean as possible.

Buy to Order Required Date

Use this setting to determine the sales order line *Required* date for purchase to order items (those with a *Reorder Level* of zero).

How the required date gets established

When a sales order line is created for a purchase to order item, the *Required* date is forward scheduled from the current date by the item's *Lead Days* allocation, rounded forward to a valid shop day defined on the shop calendar.

This is exactly the same formula used by MRP when it backward schedules planned POs from required dates and insures that sales order and MRP dates are synchronized.

The required date for purchase to order items can also be extended by specifying an extra *Shop Days* amount.

How it is used

Keep in mind that the default required date, without extra *Shop Days* added, represents the <u>minimum</u> required date for normal orders. If you wish to quote a more conservative required date as standard policy, knowing that it can be shortened to the minimum when needed, you can "pad" required dates with an extra *Shop Days* amount.

Sales Orders

(Sales – Sales Orders)

New processing has been added to the header *Promise Date* and line item *Required* date.

Header Tab – Promise Date

When the sales order is created in the *New Sales Order* screen, this now defaults to the *Promise Date* setting in *Sales Order Defaults*, but can be changed. When new line item records are created for items that are made or purchased to stock (those with a *Reorder Level* greater than zero) as well as for descriptors, the line *Required* date is made equal to this date by default.

Details Tab – Delivery Button

The *Delivery Date Estimator* now includes the Extra Shop Days setting from Sales Order Defaults, which provides advance preparation time to finalize job details or delays the job due to a temporary constraint in shop capacity. The *Extra Shop Days* are added to the *Lead Days* to determine the *Job Start Date*.

Details Tab – Line Required Date

This date is now synchronized with MRP and works like this:

- If an item is made or purchased to stock (meaning it has a *Reorder Level* greater than zero), or the item is a descriptor, by default the sales order line *Required* date is made equal to the sales order header *Promise Date*.
- Items made or purchased to order (those with a *Reorder Level* of zero) are handled as follows:
 - When a sales order line is created for a make to order item, the Required date is forward scheduled from the current date by the item's Lead Days + Job Days allocations, plus any extra Shop Days specified in Sales Order Defaults, skipping over non-shop days defined on the shop calendar.
 - When a sales order line is created for a purchase to order item, the Required date is forward scheduled from the current date by the item's Lead Days allocation plus any extra Shop Days specified in Sales Order Defaults, rounded forward to a valid shop day defined on the shop calendar.

MRP Defaults

(MRP – MRP Setup – MRP Defaults)

Use Lead Days Generator (New – Recommended)

Select this checkbox to activate the new *Lead Days Generator*, which automatically calculates manufactured item *Lead Days* allocations in real time. When activated, each item's *Lead Days* is made equal to the longest lead time among its to-order components (those with a zero *Reorder Level*). The lead time for a purchased component is its *Lead Days* allocation. The lead time for a manufactured component is its *Lead Days* + *Job Days* allocations.

NOTE: Activation is recommended because the calculated *Lead Days* provides for correct alignment of multi-level, make-to-order job dates. In the next product build, this option will be removed and the *Lead Days Generator* made standard.

MRP Settings

(MRP – MRP Settings)

Reorder Level – Reorder Calculator (New)

A new Reorder Calculator is used to establish an item's Reorder Level.

Considerations

To make or purchase an item to stock, it must be given a *Reorder Level*. MRP will generate a job or PO whenever net demand within the item's planning period falls below its *Reorder Level*.

If you wish to make or purchase an item to order, give it a zero *Reorder Level*. MRP will generate a job or PO whenever demand materializes from sales orders and jobs. Many items have relatively short planning periods and can thus be made or purchased to order as needed without causing an undue delay in starting jobs that use the item or shipping customer orders.

When an item has a relatively long planning period, however, it cannot be made or purchased to order because doing so would cause an unacceptable delay in starting jobs that use the item or in shipping customer orders. Where this is the case, the item must be made or purchased to stock so that it is available without delay when needed by jobs and sales orders.

Using the Reorder Calculator

The *Reorder Level* amount is established using the *Reorder Calculator*, which is accessed by the button within this field.

The *Reorder Level* must be sufficient to cover projected demand within the item's planning period. Projected demand consists of three elements:

Monthly Sales

This is your estimate of current monthly unit sales for the item. On this screen you can review past sales history with monthly and quarterly averages to help determine your estimate.

Monthly Usage

This is your estimate of the current monthly usage for the item, meaning its use as a subassembly or purchased component in various jobs. On this screen you can review past usage history with monthly and quarterly averages to help determine your estimate.

Safety Stock

If the sales or usage for this item varies greatly from month to month, you should enter a safety stock amount to cover possible spikes in demand that could result in stock shortages. On this screen you can review past deviations in monthly sales or usage that can help you determine an appropriate safety stock amount.

The program translates the sum of these three amounts into a daily average that is then multiplied by the item's planning period days to arrive at a calculated *Reorder Level*.

Min Order – Supply Days Setting (New)

A new *Supply Days* setting within the new *Reorder Calculator* can be used to calculate the *Min Order* amount.

Considerations

This *Min Order* setting provides control over job quantities. When MRP generates a job, the job quantity will be equal or greater than the *Min Order* amount, no matter how small the actual net demand may be.

Keep in mind that if an item does not have a *Min Order* amount, whenever demand materializes, no matter how small the demand may be, MRP will generate a job. So if you wish to reduce the sheer number of jobs that get generated, use the *Min Order* setting to achieve larger job quantities.

Purposes

The Min Order amount has three main purposes:

Economical order quantity

The *Min Order* amount can be used as an economical order quantity. In the case of M items, it can be used to generate job quantities sufficiently large enough to justify machine setups or to match quantities with machine sizes. In the case of P items, it can be used to take advantage of supplier price breaks and to reduce unit shipping and handling costs that are typically higher with smaller orders.

Purchasing items with extremely long Lead Days

When an item has an extremely long *Lead Days* allocation, such as several months, the *Min Order* can be used to create a series of staggered POs. For example, in the case of an item with a six month lead time, the *Min Order* could be set to supply 30 days of anticipated demand. If demand materializes as expected, MRP would generate a PO every 30

days. At any given time, six POs would be in progress, each due to arrive in 30 day intervals.

Blanket purchasing

If you give a supplier an annual volume commitment in exchange for a fixed price and you wish to issue POs at regular intervals, such as once a month, the *Min Order* is used to achieve this by means of the *Supply Days* setting (see below),

NOTE: Absolutely do not manually create blanket POs, which have artificial due dates that conflict with actual required dates, causing shortages and over-supply. Instead, use the *Supply Days* setting, which generates blanket-style POs at regular intervals, triggered by actual demand and synchronized with required dates.

If you are using the *Min Order* amount for an economical order quantity, enter the quantity directly in the *Min Order* field.

If you are using the *Min Order* amount for managing long lead days items or for blanket purchases, you must use the *Supply Days* setting (see next) to calculate the *Min Order* amount.

Using the Supply Days setting (Reorder Calculator)

The *Supply Days* setting is located within the *Reorder Calculator* screen, which is launched by clicking the button in this field.

The Supply Days is always used in combination with the item's Reorder Level. The Reorder Level is calculated by entering projected demand in the Sales, Usage, and Safety Stock fields.

The *Supply Days* represents the number of days of projected demand you wish to be covered by each PO. The program takes projected monthly demand, converts that amount into a daily average, then multiplies it by the *Supply Days* to arrive at a calculated *Min Order* amount.

If projected demand proves accurate, MRP will generate a PO for the item at intervals equal to the *Supply Days* amount. The ability to control PO intervals is what makes the *Supply Days* setting ideal for managing long lead days items and blanket purchases.

M Item Lead Days – Lead Days Generator and Inquiry (New)

Each manufactured item has a *Lead Days* allocation that is now automatically calculated by the program in real time. The *Lead Days* represents the longest lead time of any BOM component for this item that is made or purchased to order (meaning the component has a zero *Reorder Level*). The *Lead Days* is used by MRP to allocate sufficient time prior to starting the job for material procurement or making subassemblies.

Considerations

An item's *Lead Days* plus *Job Days* constitute its planning period. If the item is made to order and its planning period results in shipping dates that are not

acceptable to your customers, the *Lead Days* allocation must be reviewed to see if its calculated value can be shortened.

You can click the button in this field to launch the *Lead Days Inquiry* to review the components that contribute to the calculated *Lead Days* allocation. The inquiry displays a multi-level view in cases where a chain of subassemblies must be made to order before a job for this item can be started.

If you note that a particular component in the chain contributes more to the calculated *Lead Days* than you consider acceptable, you have the option of making or purchasing that item to stock instead of to order, in which case the component will be removed as a contributor to the calculated *Lead Days*. This may or may not result in the calculated *Lead Days* being shortened, depending on what other contributor components remain in the chain. In some cases, multiple components may have to be removed as contributors.

To make or purchase a component item to stock, it must be given an appropriate *Reorder Level*.

Jobs – Data Views

(Jobs - Data Views)

Closed Job Material Usage (New)

Use this data view to get a listing of estimated versus actual material usage for components and parent items in closed jobs. Standard layouts include:

- All Fields
- Primary Output by Item ID
- Primary Output by Job No

NOTE: This data view can help with scrap cost analysis and was added in response to numerous customer requests.

Purchasing – Data Views

(Purch – Data Views)

PO Details (New)

Use this data view to analyze open and closed POs by item, descriptor, subcontract service, supplier, or manufacturer within a creation date range. Standard layouts include:

- All Fields
- Details by PO Number
- Details by Reference ID

PO Receipts (New)

Use this data view to analyze PO receipts by supplier, PO, and item, including comparisons of due dates with actual receipt dates. Standard layouts include:

- All Fields
- Receipts By Reference ID
- Receipts By PO Number
- Receipts By Suppler Reference ID
- Delivery Days by Item Supplier
- Delivery Days by Supplier Item

Updated Overview Videos

- What Is DBA Manufacturing?
- MRP Overview

Updated Setup Videos

Stock Item Setup

- Stock Item Entry
- MRP Settings
- Shipping
- Suppliers
- Manufacturers

Updated How Do I? Videos

Mfg #2 – Job Planning

- CTO
- Run Size & Job Days
- Reorder Level
- Min Order
- Lead Days
- Multiple
- Overlap

Mfg #3 – Job Creation

- SO Required Dates
- Job Rescheduling

Purch #2 – PO Planning

- Lead Days
- Reorder Level
- Min Order
- Lead Days
- Multiple

Sales Order Training Course

Required Dates

New Documentation

We highly recommend that anyone using or planning to use MRP read this preface to the MRP chapter in the Operating Guide.

7-1. How to Use MRP

This chapter preface explains everything you need to know about using MRP and is organized into these seven sections:

7-1A. Overview

This section explains the "just in time" nature of MRP and how it generates a coordinated master schedule based on your item settings.

7-1B. The 10 Common Planning Issues

In this section we review the ten planning issues that are common to all manufacturing companies and the specific MRP planning tools that can be used to address each issue.

7-1C. Manufactured Items Setup

This section explains how to establish and refine MRP settings for your manufactured items and includes a list of setup tasks and mistakes to avoid.

7-1D. Purchased Items Setup

This section explains how to establish and refine MRP settings for your purchased items and includes a list of setup tasks and mistakes to avoid.

7-1E. SO Required Dates

This section explains how to manage sales order required dates so that they are compatible with MRP scheduling dates.

7-1F. MRP Generation

This section provides step-by-step instructions for job and PO generation.

7-1G. The Master Schedule

This final section explains how to manage and execute the master schedule that was generated by MRP.